

Research and Development Grants awarded to State Universities through the ARRA

7/17/2009

Title of Project	Project Type	Amount	Period	Summary	Federal Agency	Institution
A molecular dynamics study of Amyloid beta peptide structure near lipid bilayers	Health	\$27,414	5/5/2009-5/4/2011	To determine appropriate treatments and potential cures for Neurodegenerative disorders; to understand the mechanism by which proteins misfold and aggregate.	National Institute on Aging	UNC-CH
Modeling HIV-1 Eradication Therapies in the hu-Rag2-/-gamma c-/- Mouse Model -	Health	\$219,479	4/1/2009-3/31/2011	Persistent HIV infection of memory CD4+ T cells is a critical obstacle to eradication of HIV-1 infection. To study agents to be developed that expose this viral reservoir to therapeutic intervention, without augmenting de novo HIV infection.	National Institutes of Health	UNC-CH
The nexus of drugs, sex networks, HIV and syphilis in young African American MSM	Outreach and Engagement	\$146,268	4/1/2009-3/31/2011	To study two phenomena observed in North Carolina that suggests dual outbreaks are occurring of HIV infection and primary and secondary (P&S) syphilis among a specific class of young adult African-American men.	National Institute on Drug Abuse	UNC-CH
Agent-based modeling of virus-host cell interaction in salivary gland disease	Health	\$30,458	5/5/2009-5/4/2011	Caries, periodontal disease, disfigurement, mucosal pathology and occasional development of B cell lymphomas result from salivary gland disorders (SGD) and a related HIV SGD, have no known cause or cure. To study the BKV infection or reactivation as a factor in disrupting cellular processes leading to the development of SGD.	National Institute of Dental and Craniofacial Research	UNC-CH
Instrumentation for upgrading cryoEM and single particle analysis capabilities	Health	\$310,074	4/1/2009-3/31/2010	Examination of the 3 dimensional structure of large macromolecular assemblies often of megadalton mass or greater remains beyond the reach of X ray or NMR methods.	National Institutes of Health	UNC-CH
Selective Attention and Control Mechanisms in the Brain.	Health	\$433,792	5/1/2009-4/30/2011	Mechanisms of attention are critical for efficiently processing relevant information and avoiding distraction amidst a constant flood of sensory input. If these mechanisms are damaged, cognitive and social functioning can be severely impaired.	National Institutes of Health	UNC-CH
Confocal Laser Scanning Microscope LSM 710 #5	Health	\$449,189	4/1/2009-3/31/2010	The purpose of this proposal is to purchase a Zeiss LSM 710 confocal laser scanning microscope that serves the Cancer Research	National Institutes of Health	UNC-CH

Francisella tularensis Pathogenesis	Health	\$363,985	5/1/2009-4/30/2010	Francisella tularensis is an extremely virulent Gram negative bacterial pathogen capable of causing rapidly progressing lethal infections in literally hundreds of diverse animal species, including humans.	National Institutes of Health	UNC-CH
Role of Yaps In Y. Pestis Pathogenesis	Health	\$367,558	5/15/2009-4/30/2010	Historically Y. pestis has been responsible for significant human morbidity and mortality. However, Y. pestis is typically a pathogen of rodents, and is unique among the Enterobacteriaceae in using a blood-sucking insect (flea) for transmission (34).	National Institute of Allergy and Infectious Diseases	UNC-CH
Pathogenesis of HCV in a Novel Mouse Model - ARRA	Environment	\$216,218	7/1/2009-6/30/2011	This project extends long-standing interests in studying human infectious diseases and therapy in relevant in vivo models.	National Institutes of Health	UNC-CH
Differential regulation of multiple transgenes for treatment of eye disease	Health	\$810,937	7/1/2009-6/30/2011	Differential regulation of multiple transgenes for treatment of eye disease	National Institutes of Health	UNC-CH
Francisella tularensis Interactions with Airway Epithelial Cells ARRA	Health	\$367,801	4/1/2009-3/31/2014	To Study Francisella tularensis, a zoonotic bacterial pathogen that causes fatal infections in hundreds of different animal species.	National Institutes of Health	UNC-CH
ARRA - Biomimetic Approach to the Fabrication of Red Blood Cell Mimics	Health	\$361,926	7/1/2009-6/30/2010	To study and develop safe and effective synthetic blood substitutes.	National Heart Lung and Blood Institute	UNC-CH
Antisocial Behavior, Genetics, and the Life Course	Health	\$221,875	12/1/2008-11/30/2010	The goal of this research is to integrate genetic and life course models of criminal and otherwise antisocial behaviors from adolescence to young adulthood.	NICHHD	UNC-CH
Lysyl Oxidase Control of TGF- β in Bone	Health	\$221,875	7/1/2009-6/30/2010	This project will investigate if Lysyl oxidase (LOX) oxidizes mature TGF- β 1 in bone and regulates its signaling that is critical for collagen production/ organization and mineralization.	National Institutes of Health	UNC-CH
Role of Programmed Cell Death10 (PDCD10) in p38 MAP Kinase activation and a PKD1 signaling	Health	\$185,000	12/1/2009-11/30/2011	Understanding and manipulating complex protein-protein interactions required for physiological signaling during angiogenesis and atherosclerosis is an important step in developing prevention and treatment for hemorrhagic stroke. Disruption of these interactions or dysregulation of signaling proteins can result in defective vascular formation and subsequent disease.	National Institutes of Health	UNC-CH

Harnessing Functional Genomics to Reveal Cancer Specific Determinants of Mitosis - - ARRA	Health	\$28,214	6/1/2009 8/31/2009	The goal of this supplement request is to accelerate the tempo of our research understanding the mechanisms that support mitotic progression in tumor cells. The parent grant for this supplement is focused on the characterization of previously unrecognized components of mitosis identified in a paclitaxel sensitizer screen.	National Cancer Institute	UNC-CH
The Inferior Colliculus as a Site of Electrical Stimulation ARRA	Health	\$6,048	6/1/2009 7/31/2009	To study additional methods to enable deaf persons to hear.	National Institutes of Health	UNC-CH
Investigating host genetic polymorphisms contributing to influenza virus disease.	Health	\$47,210	9/30/2009 9/29/2011	The goal of this research is to identify and characterize polymorphic host genes and pathways which contribute to virus susceptibility and pathology is a critical step for improving our understanding viral disease as well as for the development of anti-viral therapeutics.	National Institute of Mental Health	UNC-CH
Collaborative Research on Mathematical Constructs for Multiphase Complex Fluids	Environment	\$130,450	7/1/2009 6/30/2012	The projects in this proposal are to develop mathematical constructs for multiphase complex fluids (MCFs).	National Science Foundation	UNC-CH
Role of an Endosomal Membrane Ubiquitin Ligase during Apoptosis-ARRA	Environment	\$5,623	10/1/2009 9/30/2011	The goal of the proposed study is to develop a functional, quantitative subcellular proteomic approach to identify multiple substrates of in	National Institutes of Health	UNC-CH
Activation and Consequences in Prostate Cancer	Health	\$306,531	6/4/2009 5/31/2011	Our investigation into prostate cancer cell tyrosine kinase signaling revealed that Ack1, an under-studied, intracellular tyrosine kinase, never before suggested as a prostate cancer oncogene, may in fact have a profound effect on prostate cancer progression to androgen independence.	National Cancer Institute	UNC-CH
Experimental evolution of resource polymorphism, character displacement, and reproductive isolation in viruses	Environment	\$561,396	7/15/2009 6/30/2013	To determine the answers to basic questions concerning the causes and consequences of competitively-mediated diversification, specifically: (1) Why are some species especially prone to undergo such diversification? and (2) What role does competitively-mediated trait evolution play in the origin of species?	National Science Foundation	UNC-CH

Determinants of AAV Lung Tropism ARRA	Health	\$7,649	6/15/2009 8/15/2010	Aims of the parent PPG project hinge on highthroughput molecular cloning. The current supplement request is focused on accelerating research goals outlined specifically in these aims.	National Institutes of Health	UNC-CH
FRG:Advanced Algorithms and Software for Problems in Computational Bio-Fluid Dynamics	Environmental	\$870,478	7/1/2009 6/30/2012	To study increasingly complex problems such as fluid flow through bristled appendages and interactions or coordination between multiple structures.	National Science Foundation	UNC-CH
L1 Interactions in Retino-collicular Targeting	Health	\$630,518	6/1/2009 5/31/2112	This proposal focuses on the mechanism by which the neural cell adhesion molecule L1 cooperates with ephrinB and EphB receptors to regulate the map of retinal ganglion cell axons to targets in the brain.	National Science Foundation	UNC-CH
Robusticity and perturbation compensation in animal flight	Environmental	\$404,300	8/1/2009 7/31/2012	To study the body dynamics of freely behaving animals responding to perturbations, coupled with simultaneous recording of neural inputs to their locomotor muscles.	National Science Foundation	UNC-CH
Molecular regulation of the myocardin factors in vascular smooth muscle-ARRA	Health	\$370,000	7/1/2009 6/30/2011	To study the myocardin and the myocardin-related transcription factors (MRTFs) and the identification of the mechanisms that regulate myocardin activity will be important for our understanding of SMC-specific transcription.	National Heart Lung and Blood Institute	UNC-CH
Intensive Brain Training in Early Onset Schizophrenia & Schizoaffective Disorder (ARRA)	Health	\$346,499	6/1/2009 5/31/2011	This R34 pilot proposal, entitled "Intensive Brain Training in Early Onset Schizophrenia & Schizoaffective Disorder" is submitted in response to RFA-MH-09-020 Novel Interventions for Neurodevelopmental Disorders.	National Institutes of Health	UNC-CH
International Research Experience for Students in Micro Medical Manufacturing (IRES-MMM) with the University of North Carolina and Laser Zentrum Hannover	Outreach and Engagement	\$150,000.00	7/15/2009 6/30/2012	The development of a comprehensive research and education program between the University of North Carolina/North Carolina State University Joint Department of Biomedical Engineering and the Department of Nanotechnology at Laserzentrum Hannover to fully and systematically assess the structural and functional properties of Ormocer® microneedles created using two photon induced polymerization.	National Science Foundation - Research (NSF)	UNC-CH

Habits and cues in alcohol drinking: Dynamic striatal activity - ARRA	Outreach and Engagement	\$36,508.00	6/1/2009 8/31/2010	This is an administrative supplement application in response to NOT-OD-09-060 Administrative Supplement Notice for Students and Science Educators under the Recovery Act.	National Institute on Alcohol Abuse and Alcoholism	UNC-CH
Beyond LambdaCDM: Theoretical Predictions & Observational Constraints	EV	\$25,000.00	7/15/2009 6/30/2010	N/a	National Science Foundation - Research	UNC-CH
Signaling in endothelial growth and angiogenesis	Health	\$20,733.00	6/1/2009 8/31/2010	N/a	National Institutes of Health	UNC-CH
Role of Adenosine in Allergic Lung Disease - ARRA	Health	\$17,154.00	5/12/2009 7/31/2010	Adenosine has become increasingly recognized as a contributor to the pathogenesis of asthma through its effects on airway tone and airway inflammation.	National Heart Lung and Blood Institute	UNC-CH
Rational and Combinatorial Engineering of AAV Vectors ARRA	Health	\$7,212.00	6/15/2009 8/15/2010	The current supplement request is focused on accelerating research goals outlined specifically in these aims.	National Institutes of Health	UNC-CH
Role of hsnf5/BAF47 Loss in Human Cancer Development - ARRA	Health	\$0.00	4/1/2009 6/30/2009	To identify tumor suppressor genes has led to new insights into the mechanisms of human cancer development.	National Institutes of Health	UNC-CH
The Longitudinal Development of African American English and its Role in School Achievement	K-12 Education	\$0.00	5/1/2009 7/31/2009	This research examines the development of African American English (AAE) from childhood through adolescence and its potential impact on literacy acquisition and school achievement based on a unique, longitudinal database of 70 African American adolescents from low-and middle-income families.	National Science Foundation - Research	UNC-CH
Emotion-Modulated Psychophysiology of Autism Spectrum Disorders (ARRA)	Health	\$0.00	7/1/2009 6/30/2011	The framework of this proposal is that the classic autism symptoms of social-cognitive deficits and restricted repetitive behaviors may both be characterized by dysregulated goal-directed responses to affective stimuli. Thus, we hypothesize that dysregulated neurobiological mechanisms mediating approach and withdrawal motivation may underlie these two seemingly disparate symptom domains. It has been argued that poorly modulated motivational responses are core features of other disorders, a conce...	National Institutes of Health	UNC-CH

Differentiation of Alveolar Epithelium and Pulmonary Fibrosis	Health	\$74,459	5/11/2009-4/30/2010	To apply new concepts developed from recent in vitro modeling of normal human alveolar epithelial cell differentiation and in vivo modeling of pulmonary fibrosis in rats to study novel ideas	National Institutes of Health	NCSU
Live Oral Listeria Vaccine Vector	Health	\$185,620	6/1/2009 5/31/2009	The purpose of this R21 application is to explore the feasibility of using bacteriophage resistance as a feature of a live, attenuated, oral Listeria monocytogenes vaccine delivery platform.	National Institutes of Health	NCSU
Improving Animal Resources at N.C. State University	Economic Transformation	\$161,470	6/8/2009 6/7/2010	This improvement request involves animal facility equipment purchase for the North Carolina State University (NCSU) College of Veterinary Medicine (CVM), specifically, individually ventilated cage systems for mice, and support equipment, for use in the the Research Building Vivarium.	National Institutes of Health	NCSU
High-Resolution Structures and Ligand-Induced Conformational Changes of Membrane Proteins by Solid-State NMR: Methodology Development and Applications	Economic Transformation	\$776,892	7/1/2009 6/30/2013	To research membrane proteins to Answer important biological and biophysical questions by radically improving current SSNMR methods.	National Science Foundation	NCSU
HCC: Medium: Collaborative Research: Improving Older Adult Cognition: The Unexamined Role of Games and Social Computing Environments	Health	\$770,856	9/1/2009 8/31/2013	The goals of this research program are to understand how variables within social computing environments improve older adult cognition, what properties of an environment are critical, and empirically test these properties in interventions with older adults.	National Science Foundation	NCSU
Kenan Fellows Master Teachers: Partnering For Success in the 21st Century	Health, Outreach and Engagement	\$1,499,934	6/2/2009 5/31/2011	The Kenan Fellows Program is partnering with interested parties in North Carolina's BRAC/RFT region to improve K-12 STEM education in these counties high-need schools.	National Science Foundation	NCSU
Hyperthermophilic Affinity Ligands For Protein Purification	Health, Outreach and Engagement, Economic Transformation	\$298,106	7/1/2009-6/30/2012	The goal of this research grant is to develop novel protein based ligands for affinity chromatography.	National Science Foundation	NCSU
Characterization of the Microstructure and Charge Transport at Interfaces of	Environment, Health, Outreach and Engagement, Economic	\$317,622	7/1/2009-6/30/2012	to study the impact of interfacial interactions of polymers on charge transport in semiconducting polymers.	National Science Foundation	NCSU

Semiconducting Polymers	Transformation					
Solid-Supported Cyclotrimerizations - A Library Approach to Research and Teaching	Health, Outreach and Engagement	\$500,000	7/1/2009 6/30/2014	The goal of this project is to develop the first chemo- and regioselective cyclotrimerization reaction and establish it as an approach for the rapid assembly of natural products and libraries of analogs.	National Science Foundation	NCSU
Comparative Strategies of Ion Trafficking and Antioxidant Physiology in Stream Insects: A Phylogenetic Approach	Health, Outreach and Engagement	\$485,999	8/1/2009 7/31/2012	This research program will use a phylogenetically based, comparative approach to understand and predict physiological attributes of species within and among two dominant aquatic insect lineages.	National Science Foundation	NCSU
Center For the Integration of Composites Into Infrastructure (CICI)	Economic Transformation	\$315,000	7/15/2009 6/30/2014	To establish the Center For the Integration of Composites Into Infrastructure to focus on new research concerning.	National Science Foundation	NCSU
Molecular Genetics of Ethylene-Auxin Interactions in Arabidopsis	Economic Transformation, Access to Health, Environment	\$733,503	7/15/2009 6/30/2012	To study three major aspects of the auxin biology.	National Science Foundation	NCSU
Radial Growth Responses Among Naturally-Occurring Western US Conifers Under Changing Environmental Conditions	Environmental	\$ 182,953	6/1/2009 5/31/2012	This study is designed to examine the potential competitive interactions of two co-occurring and economically important western US conifers growing under natural conditions in a warmer, drier, and increasingly CO2-rich atmosphere.	National Science Foundation	ASU
Summer Opportunity for Academic and Research Enhancement (NCAT-SOARE) Program	Outreach and Engagement	\$129,670	06/01/09 07/31/11	This is an administrative supplement to expand the RIMI program at North Carolina A&T State University	DHHS-NIH-NCMHD-National Center On Minority Health And Health Disparities	NCA&T
Fertility and Oral Contraceptive use Study (FOCUS)	Health	\$216,000	5/1/2009- 4/30/2011	A 2-year cohort pilot study with the overall goal of examining methodological issues related to the successful implementation of a large study to investigate the role of obesity in OC failure.	DHHS/NIH/NICHD	UNC Charlotte
Using a Community Based Participatory Research Approach to Examine Family Support	Health	\$216,000	6/2/2009 5/31/2011	The long-range objectives of this project are to improve family functioning and reduce disparities in mental health services and outcomes through the development of a sustainable research partnership among family support providers and university researchers.	DHHS/NIH/NIMH	UNC Charlotte

Dance.Draw: Embodiment as Input for Collaborative, Creative Expression	Health	\$762,372	7/1/2009- 6/30/2012	We propose to study lightweight embodiment as an input for collaborative creative interaction, specifically applied to the domain of dance interactive performances with measured audience response/interaction with performance.	National Science Foundation	UNC Charlotte
Etiology of translocations in hematopoietic cells	Health	\$253,473	7/1/2009 6/30/2010	The objective of this research is to understand the influence of hematopoietic-specific developmental programs on the repair DNA damage such as double strand breaks (DSBs) and the initial molecular events that lead to translocations, which are a hallmark of leukemia, lymphoma, and soft-tissue sarcomas.	Department of Health and Human Services National Institutes of Health, National Cancer Institute	UNC Charlotte
Educational Data Mining for Student Support in Interactive Learning Environments	Educational	\$ 646,982	7/1/2009 6/30/2014	This project will investigate the use of educational data mining to provide student support in interactive learning environments.	National Science Foundation	UNC Charlotte
Quantile Regression for Multivariate Time Series Models with Functional Coefficients	Economic Transformation	\$ 99,999	7/15/2009 6/30/2012	The aim of this proposal is to develop quantile regression (QR) modeling theory of multivariate time series data with multivariate exogeneous variables by advancing several multivariate functional-coefficient models	National Science Foundation	UNC Charlotte
Dynamic Predictive Maintenance System for Mitigating CSO & SSO	Environment	28,980	7/1/2009 12/31/2009	ARRA-NSF Prime_ The proposed SBIR project develops the technology innovations for implementing a dynamic predictive maintenance systems which allows the wastewater utilities to institute a just-in-time maintenance program for mitigating combined sewer overflows (CSO) and sanitary sewer overflows (SSO).	National Science Foundation	UNC Charlotte
Project On TRAC: Improving Asthma Control in Children	Economic Transformation	\$ 6,028	6/1/2009 10/31/2009	Summer Research Experiences for Students and Science Educators - Project On TRAC (Taking Responsibility for Asthma Control) is a large-scale pediatric asthma trial designed to test the hypothesis that improvements in the control of asthma in children are enabled differentially by the combination of self-monitoring experience and perception training.	DHHS/NIH/NHLBI	UNC Charlotte
Mother's Part-Time Employment	Economic Transformation	\$69,750	5/8/2009- 4/30/2010	To study the relation between maternal part-time employment and mother's psychological well-being and parental role functioning during three periods of children's development: infant-toddler, preschool, and school age.	DHHS/ NIH/ NICHD	UNCG

WellnessCorps	Public Education	\$410,816	7/1/2009-6/30/2010	The purpose of the project is to use Wellness tutors and mentors to work with school age students who are at risk of developing juvenile diabetes.	National Institutes of Health	ECU
Collaborative Integration of Public Health Content into Undergraduate Education	Health	\$14,974	6/1/2009-11/30/2010	To establish a joint program between the ECU and Pitt Community College for the integration of public health content into undergraduate liberal arts education.	Assoc. for Prevention and Teaching	ECU
Mathematics and Science Education Noyce Scholars Program	Public Education	\$899,524	6/1/2009-5/31/2014	East Carolina University (ECU) proposes using Noyce stipends to recruit and prepare teachers of high school science in ECU Noyce Scholars: Science Majors Teaching Science (SMTS).	Dept of Education	ECU
NO- independent cGMP regulation of vascular remodeling	Health	34,096.00	6/1/2009 10/31/2010	In this research project, YC-1 and zaprinast will be investigated for their ability to alter VSM cell function under in vitro conditions.	National Institutes of Health	ECU
Nurse Anesthetist Traineeships	Nursing	\$11,156	07/01/2009 06/30/2010		HRSA	ECU
Preparing a Diverse and Culturally Competent Nurse Midwifery Workforce	Nursing	\$ 250,179	07/01/09 06/30/2012	Project responds to the need for an ethically diverse Certified Nurse-Midwives to provide culturally competent primary care to vulnerable women.	HRSA	ECU
Determine the Role of CaMKII, JNK, and PLC in 10,12 CLA-Mediated Inflammation, Insulin Resistance, and Delipidation in Human Adipocytes	Health	\$ 238,977	5/15/2009 5/14/2011	To hire a highly-skilled research technician and purchase needed supplies and energy-efficient equipment to accelerate the completion of the studies proposed in the Supplement Aim.	US DHHS NIH NIDDKD	UNCG
Implication of ANAMMOX Community Structure and Microbial Interactions in Estuarine N Removal Processes	Environment	\$515,800	6/1/2009-5/31/2012	This project addresses key gaps in our understanding of ANAMMOX ecology.	National Science Foundation	UNCW
Minority Access to Research Careers Undergraduate Student Training in Academic Research	Access	\$ 309,231	8/1/2009 7/31/2011	To provide training to undergraduate honor students with emphasis on the basic mechanisms of biomedical/behavioral research.	NIH-National Institute of General Medical Sciences	WSSU

	<i>Total</i>	\$20,121,793				
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